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(54) A hand tool for cleaning, marking, painting or shielding a pipe

(57) A hand tool 2 for cleaning, marking, painting or shielding a pipe 1 comprises a resilient tube 3 having a slot 4 therein so that the tool can be clamped onto the pipe. A handle 5 enables the tool to be moved along the pipe. The tool can be used to shield a pipe when painting an adjacent wall or radiator. By lining the tube with a paint pad, the tool can be used for painting a pipe, or by lining the tube with sandpaper or polishing material, the tool can be used to clean or polish a pipe. The tool can also be used for marking pipes prior to cutting.

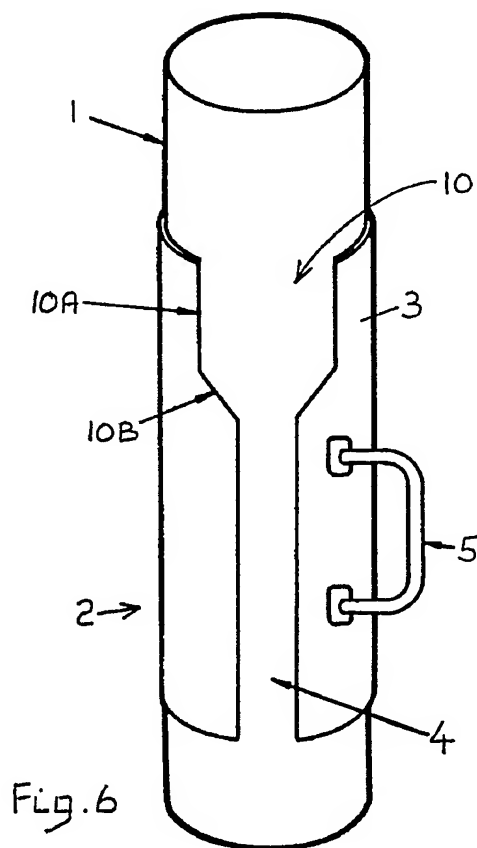
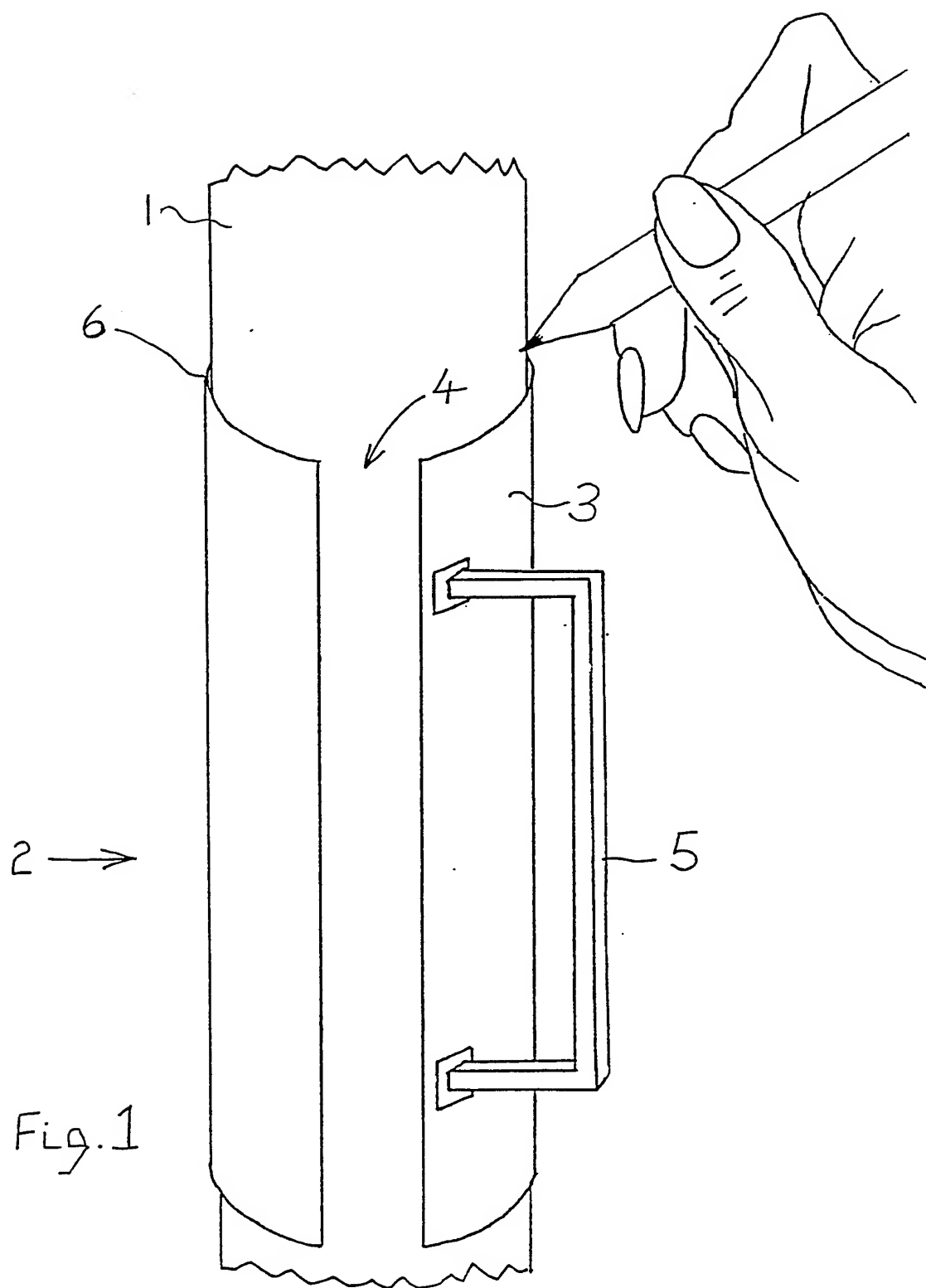


Fig. 6

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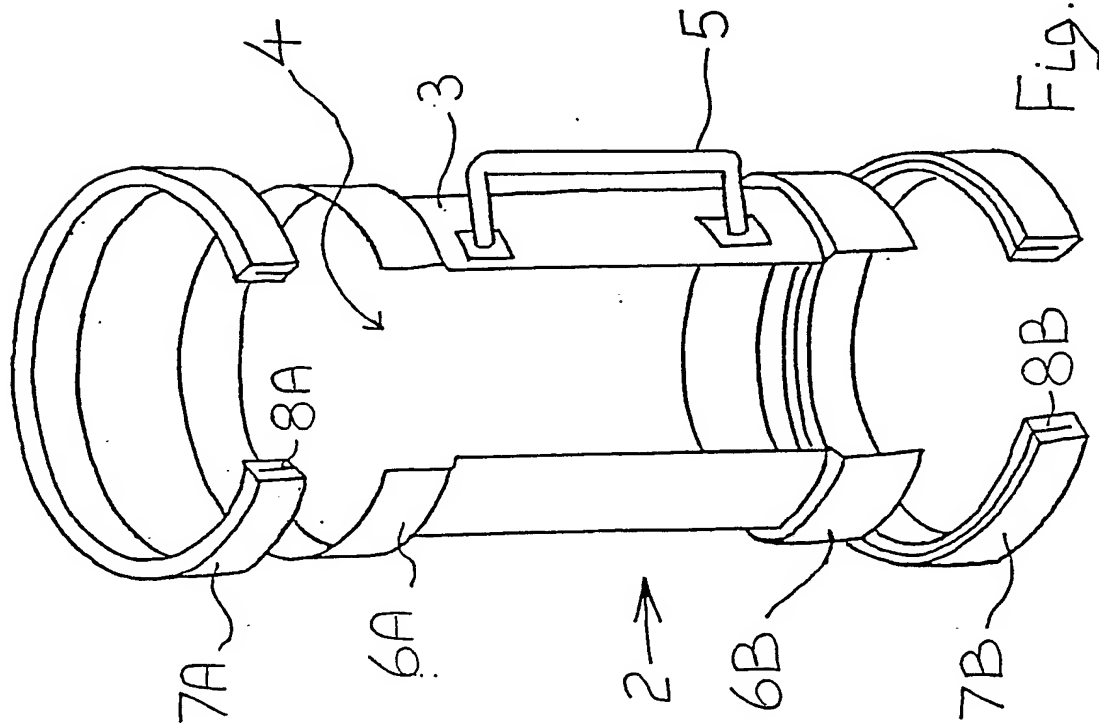


Fig. 2

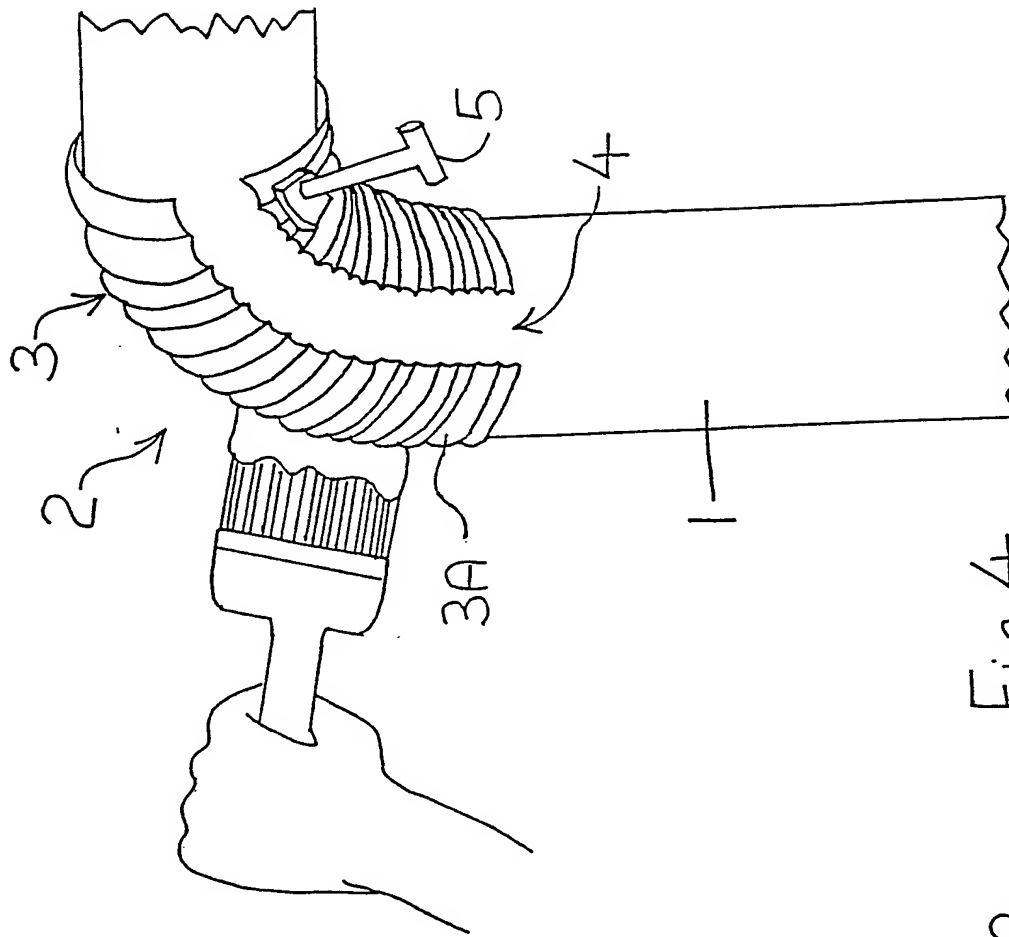
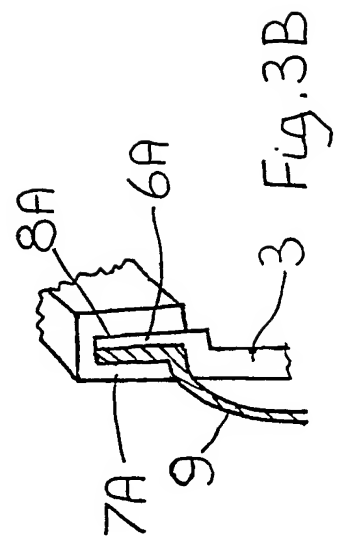
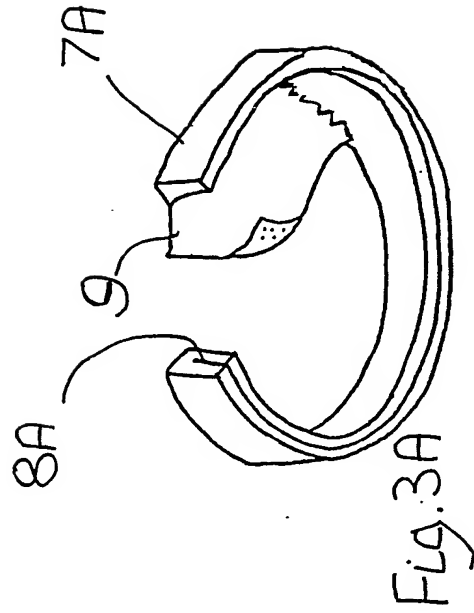
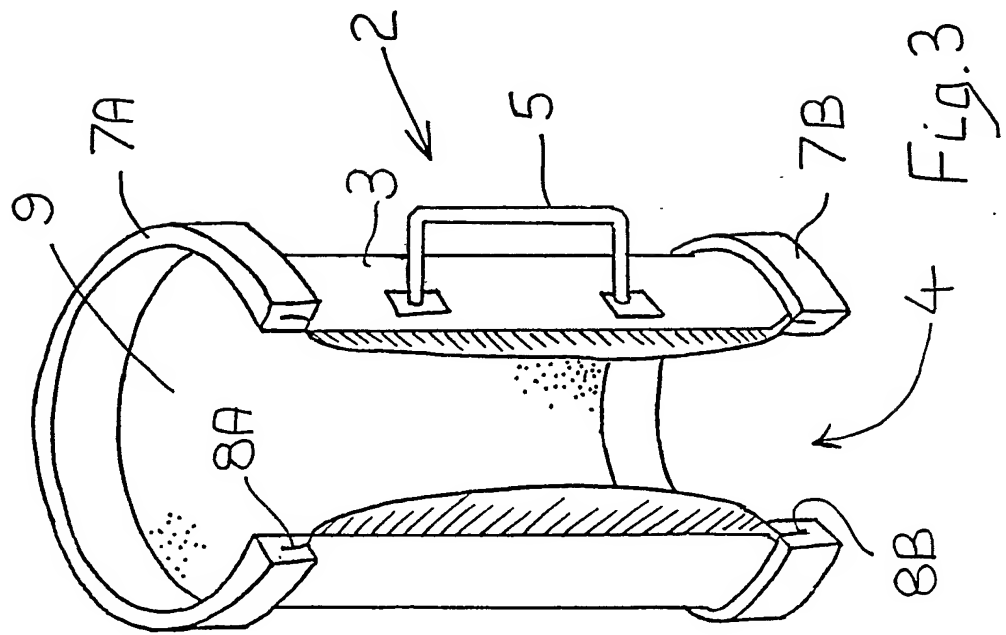
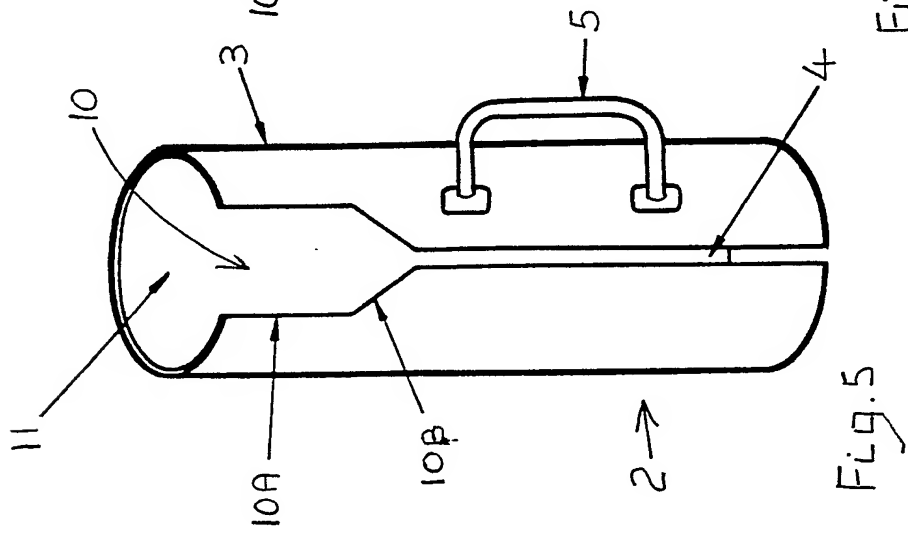
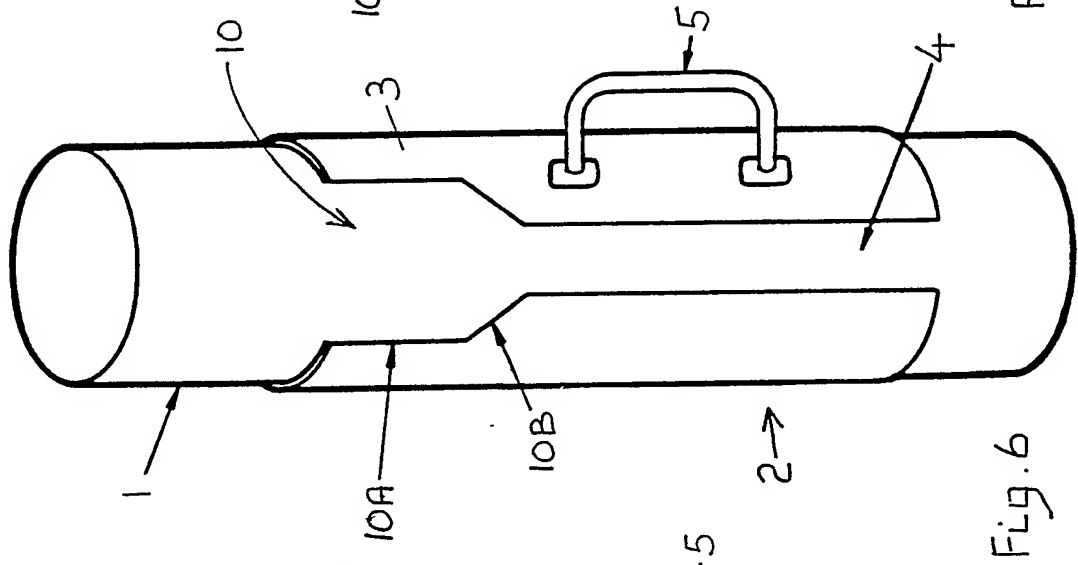
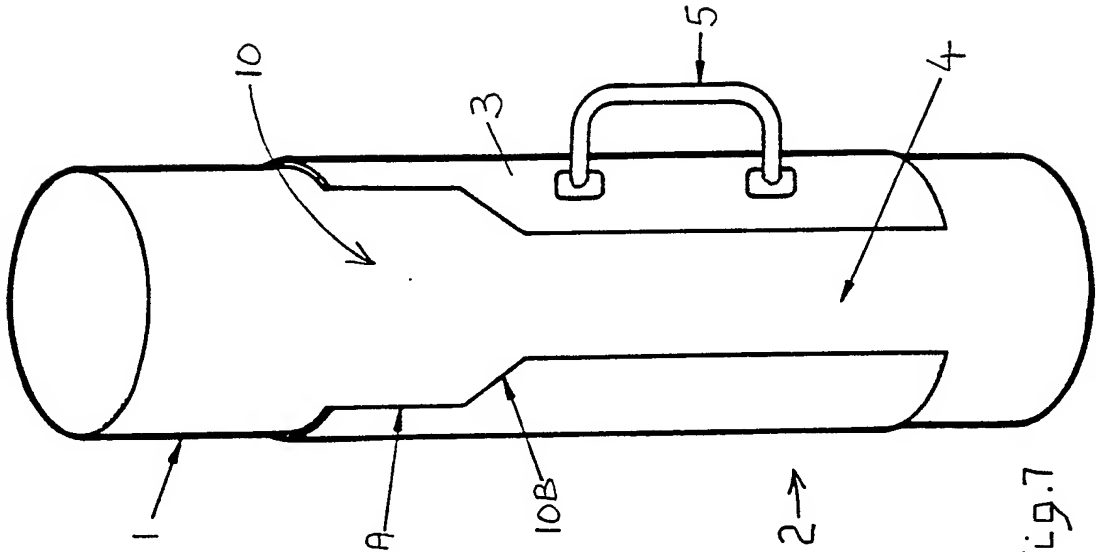
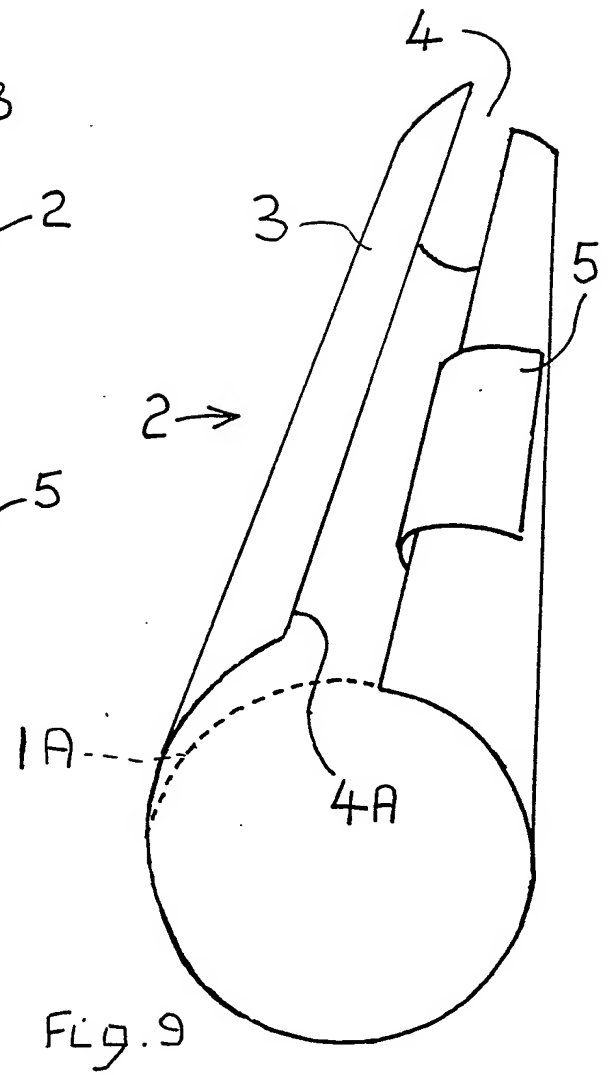
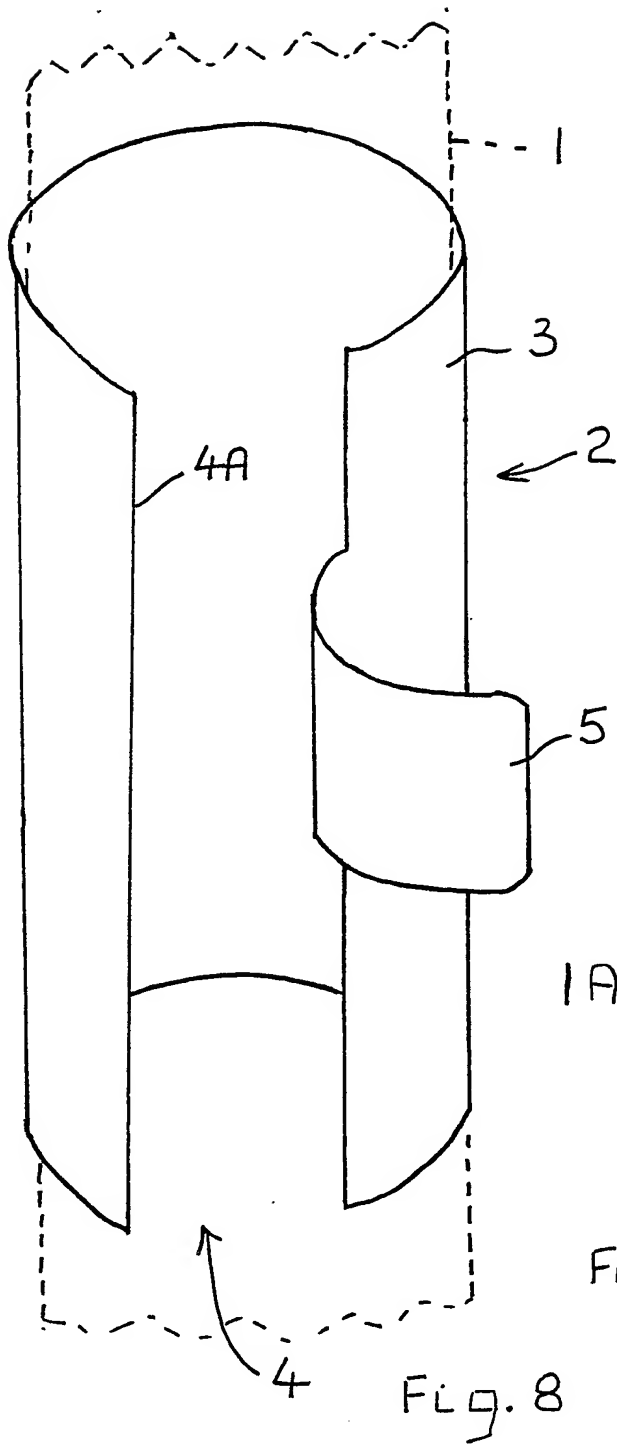


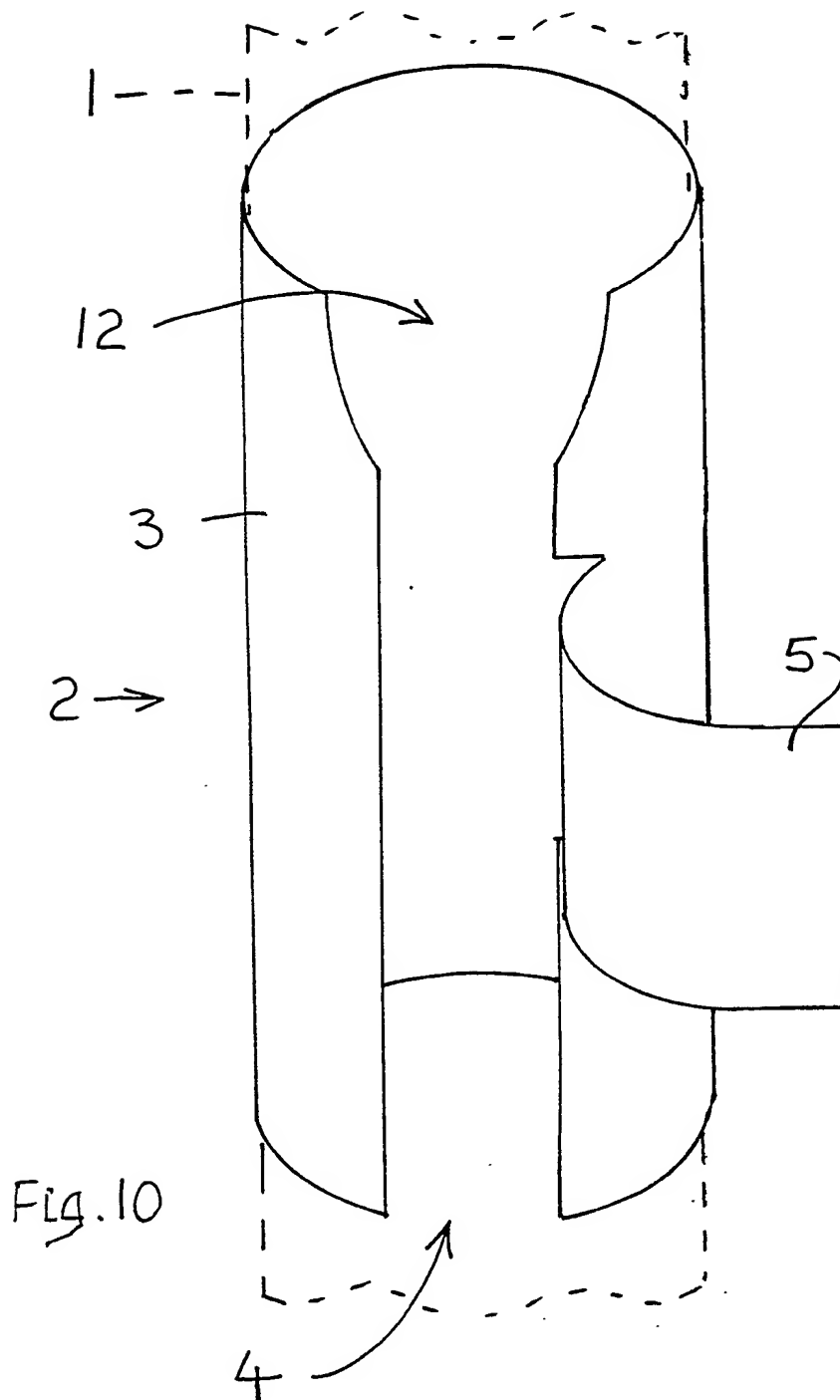
Fig. 4

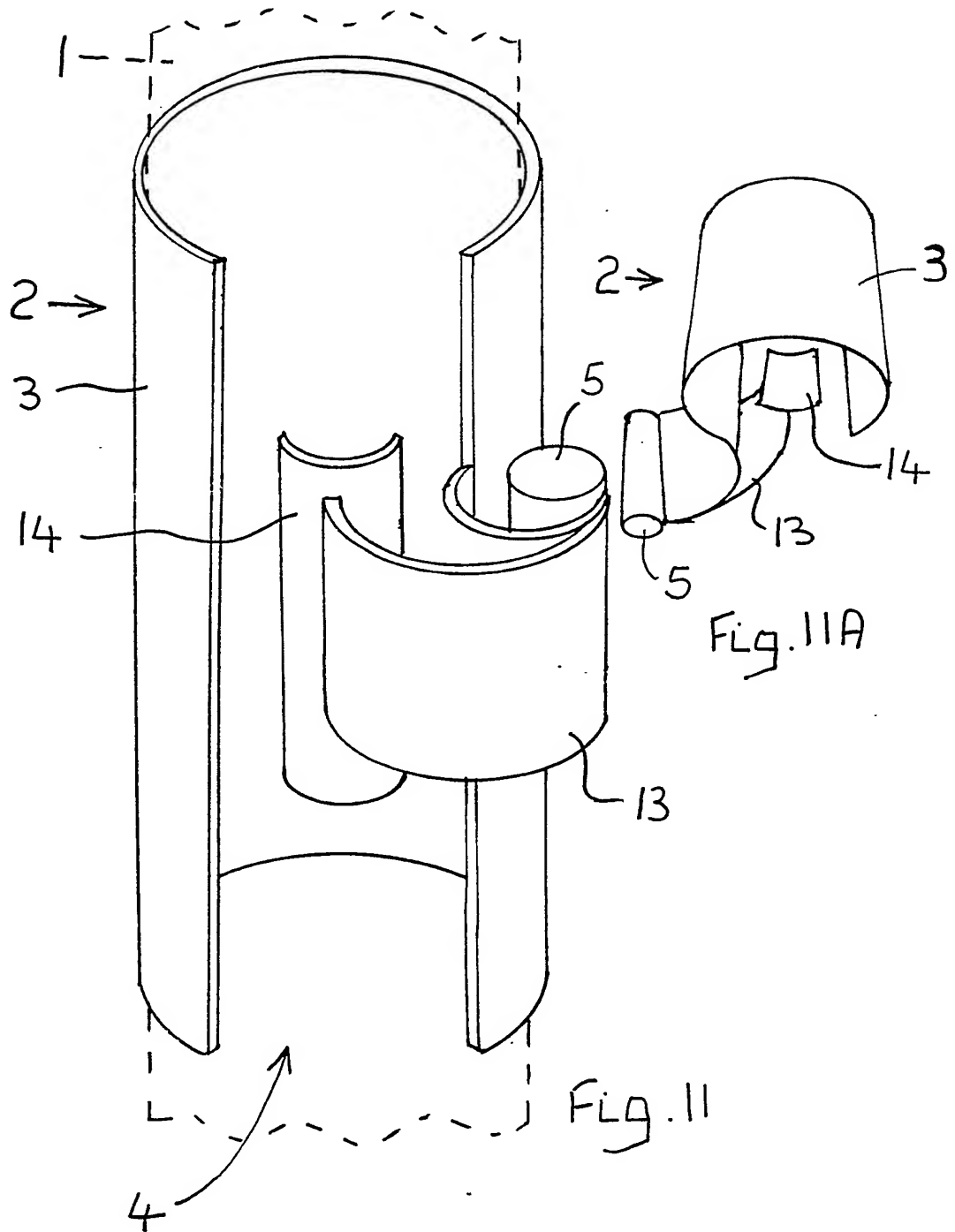


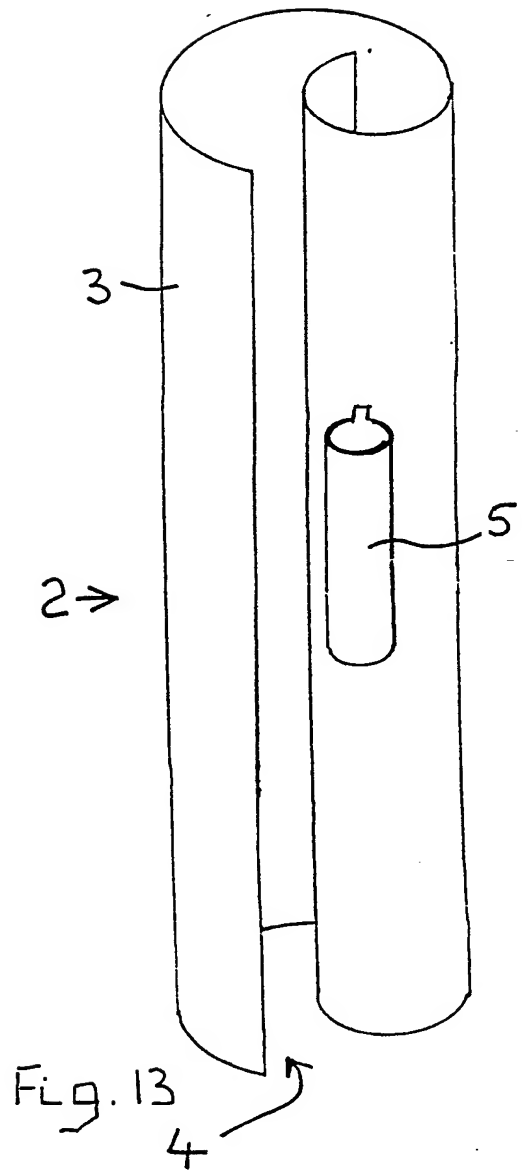
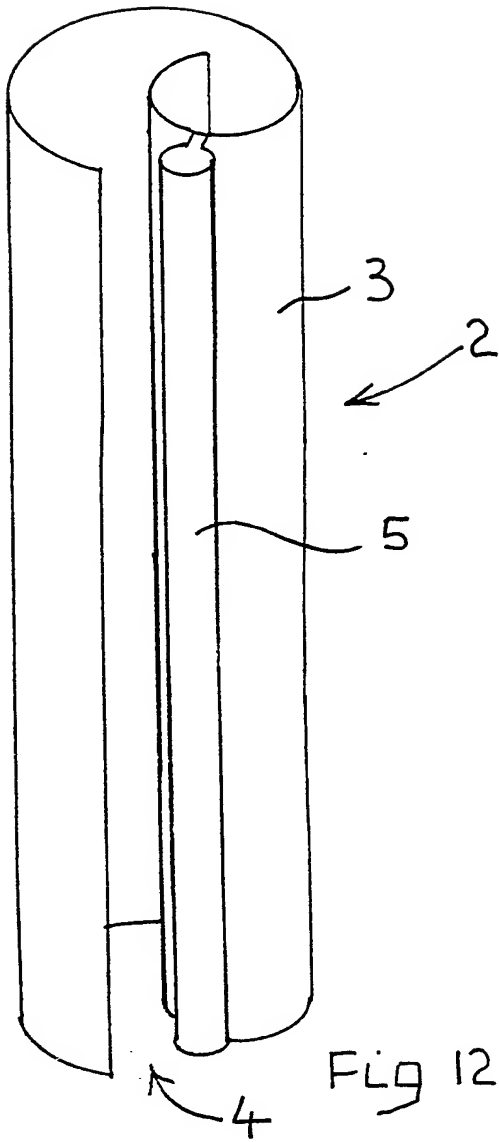




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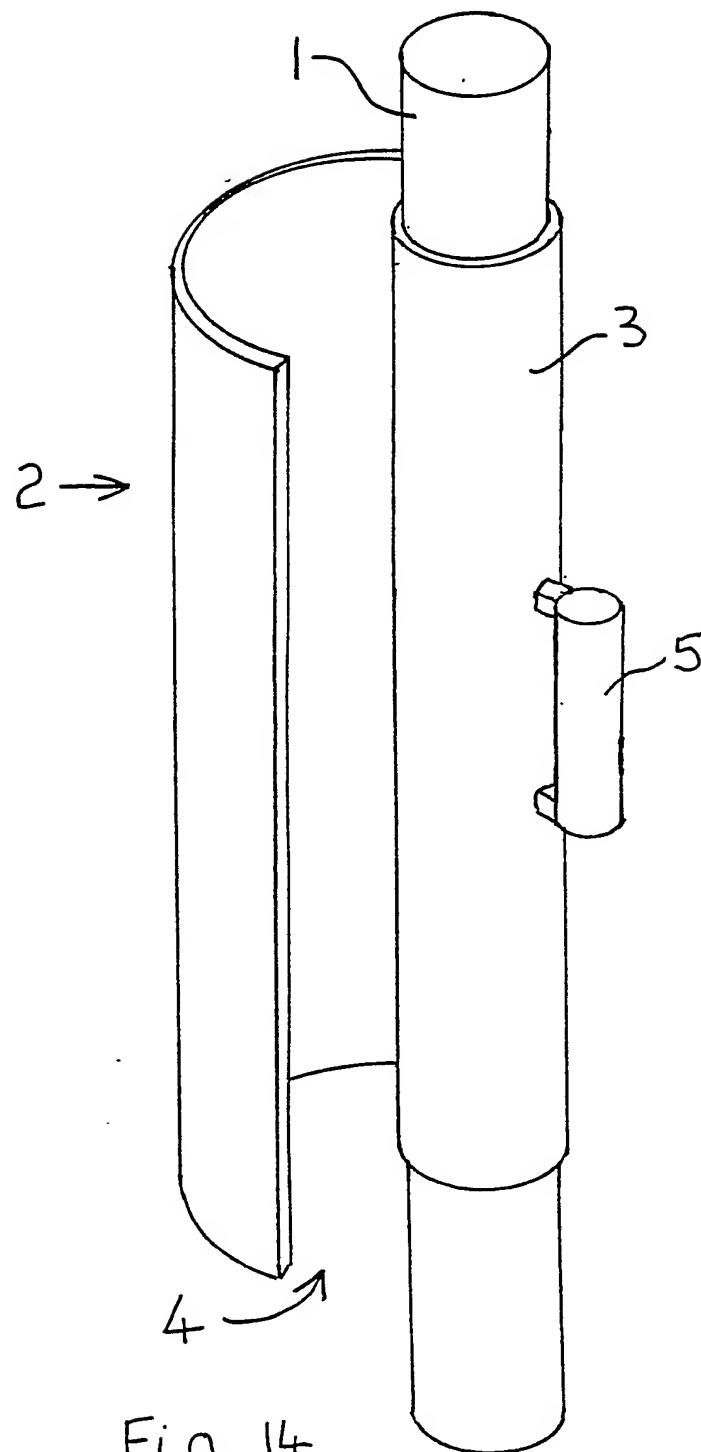


Fig. 14

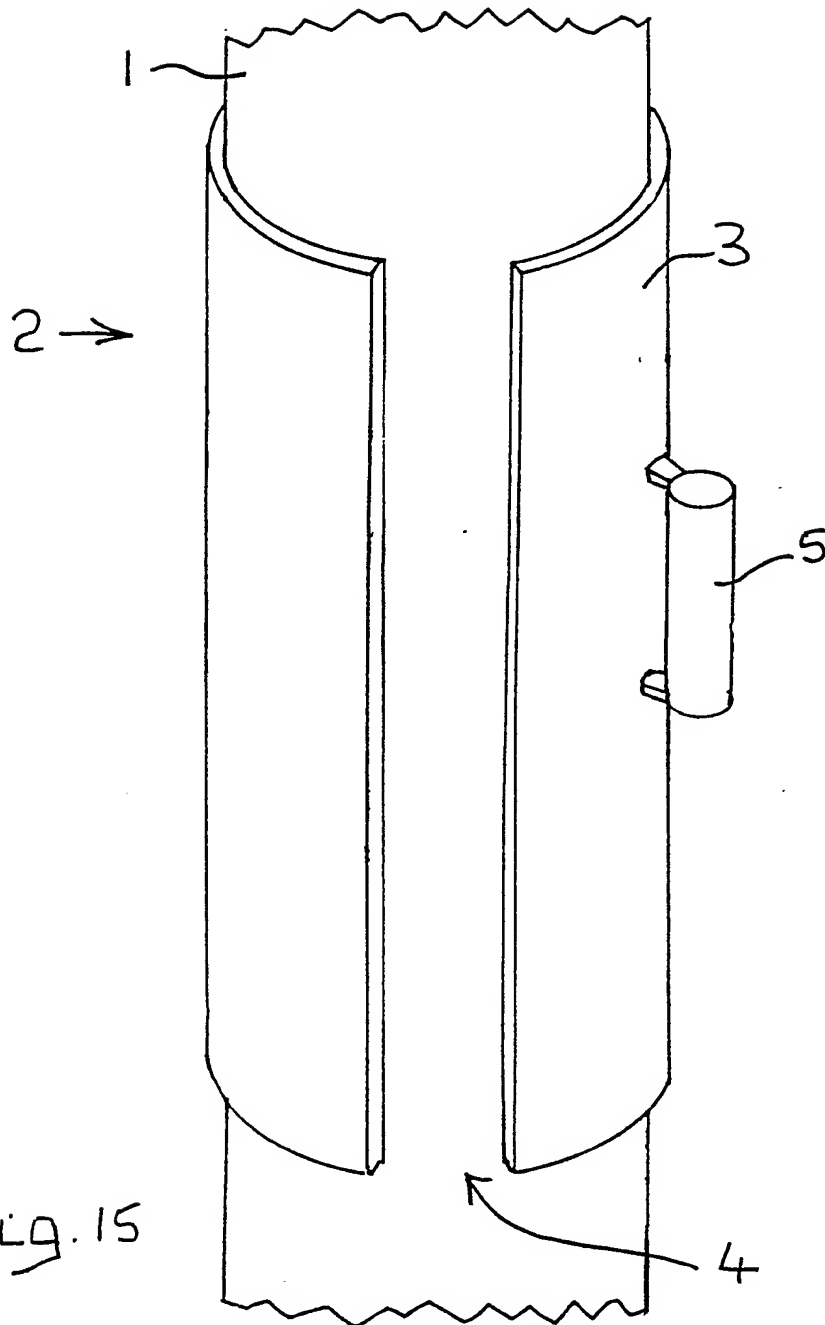


Fig. 15

DECORATING/CLEANING TOOL

This invention relates to a tool for use in decorating and/or cleaning pipe lengths, and more particularly to
5 a tool which is useful for painting on surfaces around pipes, painting pipes and preparing pipes for painting, and for marking or polishing pipes.

Painting surfaces around pipes and preparing pipes for
10 painting is often a time consuming task. Firstly the pipes need to be cleaned with sandpaper and it is difficult to sand completely around the pipe when it is close to a wall or a radiator, or in some awkward position. Secondly, when painting a wall or radiator
15 adjacent a pipe, it is difficult to paint around the pipe and avoid putting paint on the pipe at the same time. Equally, when painting a pipe, it is difficult to avoid putting paint on adjacent objects such as walls and radiators. Also, when marking pipes prior to
20 cutting, it is quite a time consuming job measuring to get a square cut. When polishing pipes it can often be difficult to polish entirely around the pipe. The invention seeks to provide a tool which solves these difficulties.

25 According to the present invention there is provided a tool for use in decorating and/or cleaning pipe lengths comprising an elongate hollow tube having a continuous slot along the length of the tube whereby a pipe can be
30 inserted through the slot and be embraced by said hollow tube, and a handle mounted on the tube to enable the tube to be moved along the length of a pipe.

Preferably the tube is formed from resilient material
35 such as plastics. The tube may be substantially circular or square, and made in different dimensions to fit different pipes.

In one embodiment the tube is flexible so as to be moveable along pipes which do not follow a straight line. The flexible tube may be formed from plastics having a plurality of rib portions interconnected by flexible portions.

In another embodiment, two end caps are provided to secure a sheet of sandpaper, paint pad material or cloth to the inside of the tube.

In a further embodiment the slot has a widened portion at at least one end to facilitate insertion of the pipe into the slot.

Preferably the widened portion of the slot includes a tapered section connecting the widened portion to the remainder of the slot.

In one embodiment, the inside surface of the tube is coated with abrasive, polishing or paint pad material.

The tool can be formed from a single piece of material.

Preferably the handle extends from one edge of the slot. The opposite edge, the leading edge, can widen at a tangent to the circumference of the pipe on which the tool is placed to facilitate insertion of the pipe into the slot.

In a still further embodiment the tube is substantially spiral in cross-section whereby different sizes of pipe can be embraced by the tube.

For a better understanding of the invention and to show how the same may be carried into effect, reference will now be made, by way of example, to the accompanying drawings, many of which are schematic and in which:-

Figure 1 is a perspective view of a first form of tool for use in decorating and/or cleaning circular pipes, shown mounted on such a pipe,

- 5 Figure 2 is an exploded perspective view of a second form of tool having end caps,

Figure 3 is a perspective view of the tool of Figure 2 shown with sandpaper as an inner lining,

10

Figures 3A and 3B show in detail how the sandpaper in Figure 2 is clamped by the end caps,

- 15 Figure 4 is a perspective view of a third form of tool, which is flexible,

Figure 5 is a perspective view of a fourth form of tool,

- 20 Figure 6 is a perspective view showing the tool of Figure 5 on a thin pipe,

Figure 7 is a perspective view showing the tool of Figure 5 on a wider pipe,

25

Figures 8 and 9 are perspective views of a fifth form of tool,

- 30 Figure 10 is a perspective view of a sixth form of tool,

Figures 11 and 11A are perspective views of a seventh form of tool,

- 35 Figure 12 is a perspective view of an eighth form of tool,

Figure 13 is a perspective view of a ninth form of tool,

Figure 14 shows the tool of Figure 13 on a thin pipe,
5 and

Figure 15 shows the tool of Figure 13 on a wide pipe.

Throughout the Figures like, or corresponding, parts
10 are indicated by the same references and will not be repeatedly described in detail.

Referring first to Figure 1, the pipe 1 has the tool 2 mounted thereon. The tool 2 is an elongate hollow tube
15 3 which may be formed of resilient material, such as plastics, having a continuous slot 4 along the length of the tube. A handle 5 enables a person to slide the tool 2 along the pipe 1. Being formed of resilient material the tool 2 can be placed on and removed from
20 a pipe 1 by opening the slot 4 (the action of applying pressure on the pipe against the slot will prise the slot open temporarily or the slot can be prised open using a tool). The slot 4 can be so wide as to require little or virtually no prising open to fit the tool to
25 a pipe of appropriate external diameter. Preferably the internal diameter of the tube is marginally smaller than the external diameter of the pipe so that the tool clamps itself around the pipe. The tool will then remain in any position it is placed on the pipe without
30 the need for it being held by the user. This leaves the user with two hands free to work.

As shown in Figure 1, an end edge 6 of the tool may be used to mark a "square" circle on the pipe for cutting.
35 The exact position for cutting can be achieved by sliding the tool to a desired position and then marking the pipe. Also if it is desired to paint a wall or

other object such as a radiator adjacent the pipe, the tool can be used to guard the pipe from the brush thus preventing paint going on the pipe.

5 Referring to Figure 2, the tool 2 is again the elongate hollow tube 3 having the slot 4 and the handle 5 similar to the tool of Figure 1. In the form of Figure 2, the tool 2 additionally comprises widened flange portions 6A, 6B. Two "C-shaped" end caps 7A, 7B are
10 positioned on the flange portions 6A, 6B by inserting the flange portions into slits 8A, 8B in the end caps 7A, 7B. The widened flange portions 6A, 6B accommodate the end caps 7A, 7B such that the internal diameter of the tool 2 is substantially equal along the length of
15 the tool. The tool of Figure 2 is used in the same way as the tool of Figure 1 but the end caps may be used to hold in place as an inner lining to the tool either a paint pad, or a piece of sandpaper, or a polishing cloth on the internal surface of the tube as shown in
20 Figures 3, 3A, and 3B.

Referring to Figures 3, 3A, and 3B, a sheet of sandpaper 9 lining the internal surface of tube 2 is held in place by having its ends clamped in the slits
25 8A, 8B of the end caps 7A, 7B by the insertion of the flange portions 6A, 6B of the tube 3 into the slits 8A, 8B. Figures 3A and 3B show more clearly the sandpaper 9 in the slit 8A of the end cap 7A, with the flange portion 6A in the slit 8A. Using the handle 5 the tube
30 3 housing the sandpaper 9 can be placed on a pipe. The action of moving the tool 2 up and down will sand the pipe, thus preparing it for painting. Instead of sandpaper, a paint pad may be used to line the internal surface of the tube 3, held in place by the end caps
35 7A, 7B, and the tool 2 can then be used for painting pipes without fear of painting adjacent obstacles such as walls and radiators. If the tool 2 is used for

painting, the internal diameter of the tube 3 may be larger than that of the pipe so that the paint pad can be accommodated easily. Paint may be applied to the pad by any suitable means such as with a paint brush.

5 Instead of a paint pad, a cloth may be used to line the internal surface of the tube 3, again held in place by the end caps 7A, 7B, for polishing a pipe.

Referring to Figure 4, the pipe 1 shown is bent through a right angle. To accommodate this the tool 2 is flexible, again formed from the elongate hollow tube 3 having the slot 4 along its length. The handle 5 allows the tool 2 to be moved along the pipe 1. The tube 3 is formed from plastics having a plurality of rib portions 3A interconnected by flexible portions to give the tool 2 the required flexibility for sliding along the pipes which are not straight.

10

15

The tool may take a variety of shapes and dimensions to suit different pipes. For example the tube may be substantially rectangular, e.g. square, in cross-section, for use with rectangular pipes, with a slot in one of the walls of the tube. If rectangular, the walls of the tube either side of the wall housing the slot may be slightly tapered towards the slot when formed so as to grip the pipe. The tool can be produced in a variety of colours and of any suitable material.

20

25

Referring next to Figures 5, 6 and 7, in this form the slot 4 has a widened portion 10 having an outer portion 10A wider than the majority of the slot 4 which leads to a tapered inner portion 10B connecting the outer portion 10A to the majority or remainder of the slot 4.

30

35

Being formed of resilient material the tool 2 can be placed on and removed from a pipe 1 by prising open the slot 4 by the action of pushing the pipe into the outer

portion 10A of the widened slot portion 10, through the tapered inner portion 10B (which has the effect of prising open the slot 4) and then through the slot 4. Preferably the internal diameter of the tube 3 is smaller than the external diameter of the pipe 1 so that the tool 2 clamps itself around the pipe 1. The tool 2 will then remain in any position it is placed on the pipe 1 without the need for it being held by the user. This leaves the user with two hands free to work. As shown in Figures 6 and 7, being formed of resilient material, the tool 2 will fit a range of different sizes of pipe 1. The widened portion 10 is particularly useful in prising open the slot 4 to accommodate wide pipes.

The widened portion 10 may take a different shape to that shown, e.g. it may include just a tapered portion 10B without the outer portion 10A. The tapered portion may be linear as shown or curved.

The inside surface 11 of the tool 2 may be coated with abrasive material in order that it may be used as a sanding device, e.g. for use in preparing pipes prior to painting. Alternatively the inside surface 11 may be coated with polishing material such as cloth, optionally impregnated with cleaning compound, to polish pipes. Alternatively the inside surface 11 may be coated with paint pad material so that the tool 2 can be used to paint pipes (in such circumstances it is desirable for the tool 2 not to clamp the pipe too tightly, i.e. the inside diameter of the tube 3 should be about the same as the external diameter of the pipe).

Referring to Figures 8 and 9, in this form the tool 2 is formed from a single piece of material, e.g. a planar piece of plastics, heat formed into tubular

shape, or extruded or injection moulded. The handle 5 extends from the edge of the slot 4 and curls round as shown. The handle 5 may include an aperture therein through which a user's fingers may pass.

5

Figure 9 shows how the leading edge 4A of the slot 4 widens out at a tangent to the circumference 1A of the pipe 1 to facilitate insertion of the pipe through the slot.

10

In the form of Figure 10 the slot 4 has a widened portion 12 tapering inwardly towards the remainder of the slot 4. The widened portion 12 facilitates the insertion of a pipe into the slot 4 in the manner described above with reference to Figures 5, 6 and 7.

15

In the form of Figure 11 the tool 2 further includes a flexible arm 13 with a curved pad 14 on the end thereof. In use the pad 14 is biased against the pipe 1 by the flexible arm 13 to secure the tool 2 to the pipe 1. The flexible arm 13 is flexible enough to enable withdrawal of the pad 14 from the slot 4 when inserting the pipe 1 into the slot 4.

20

25 In the form of Figure 12 the tube 3 is formed from flexible resilient material such as plastics. In cross-section the tube 3 is spiral-shaped. The handle 5 extends along the whole length of the tube 3. In the form of Figures 13, 14 and 15, which is otherwise like the form of Figure 12, the handle 5 extends along only a portion of the tube 3. The tools of Figures 12 to 15 can be formed by extruding long lengths of the required cross-section and cutting these lengths into individual tools, or by injection moulding, so that the tools of these Figures can thus be made from one piece of material if desired.

30

35

As shown in Figure 14, the tool 2 can be placed around a small pipe 1, in which case the pipe is inserted into and embraced by the inner portion of the spiral.

5 As shown in Figure 15, the tool 2 can be placed around a large pipe 1 in which case the pipe is inserted into the slot 4 and the spiral shape of the tube 3 is opened up to embrace the pipe 1.

10 As already described for other forms, the tools of Figures 12 to 15 may have their inner surfaces coated with abrasive material in order that they may be used for sanding, for example to prepare pipes prior to painting. Alternatively, the inside surface may be
15 coated with polishing material such as cloth, optionally impregnated with cleaning compound, for polishing pipes, or the inside surface may be coated with paint pad material so that the tool can be used to paint pipes.

20

Where any of the forms of tool described has its inner surface coated or otherwise bearing paint pad material, there is preferably associated with the tool a blank of substantially the same cross-section as the inner
25 cross-section of the tool, and of a length to extend over at least the whole length of the paint pad material. At the conclusion of a painting session the tool can be fitted to this blank so that the paint impregnated paint pad material is in close contact with
30 the blank and hence substantially sealed from the surroundings. In this way the paint pad material is held in moist condition ready for the next painting session, and there is no need thoroughly to clean the tool at the end of each painting session. Preservation
35 of the paint pad material in moist condition can be further facilitated by placing the tool, fitted to the blank, in an airtight bag, for submerging the assembly in water.

CLAIMS

1. A tool for use in decorating and/or cleaning pipe lengths comprising an elongate hollow tube having a continuous slot along the length of the tube whereby a pipe can be inserted through the slot and be embraced by said hollow tube, and a handle mounted on the tube to enable the tube to be moved along the length of a pipe.
2. A tool as claimed in claim 1, wherein the slot has a widened portion at at least one end to facilitate insertion of the pipe into the slot.
3. A tool as claimed in claim 2, wherein the widened portion of the slot includes a tapered section connecting the widened portion to the remainder of the slot.
4. A tool as claimed in claim 1, 2 or 3 and further comprising two end caps fittable one to each end of the tube to secure a sheet of sandpaper, paint pad material or cloth to the inside of the tube.
5. A tool as claimed in claim 1, 2 or 3, wherein the inside surface of the tube is coated with abrasive, polishing or paint pad material.
6. A tool as claimed in claim 1, 2, 3 or 5, wherein the tube is flexible so as to be moveable along pipes which do not follow a straight line.
7. A tool as claimed in claim 6, wherein the tube is formed from plastics having a plurality of rib portions interconnected by flexible portions.
8. A tool as claimed in claim 1 or claim 5 as

appendant to claim 1, wherein the tool is formed from a single piece of material.

9. A tool as claimed in claim 8, wherein the handle
5 extends from one edge of the slot.

10. A tool as claimed in claim 9, wherein the opposite
edge of the slot widens at a tangent to the
circumference of the pipe on which the tool is placed
10 to facilitate insertion of the pipe into the slot.

11. A tool as claimed in claim 8, 9 or 10, wherein the
slot has a widened portion at at least one end to
facilitate insertion of the pipe into the slot.

15 12. A tool as claimed in claim 1, 2, 3, 5 or 8, and
further comprising a flexible arm carrying a curved pad
for resilient engagement with the pipe on which the
tool is placed to secure the tool to the pipe.

20 13. A tool as claimed in claim 1, or claim 5 as
appendant to claim 1, or claim 8, wherein the tube is
substantially spiral in cross-section whereby different
sizes of pipe can be embraced by the tube.

25 14. A tool for use in decorating and/or cleaning pipe
lengths, substantially as hereinbefore described with
reference to Figure 1, or Figures 2, 3, 3A and 3B, or
Figure 4, or Figures 5, 6 and 7, or Figures 8 and 9, or
30 Figure 10, or Figures 11 and 11A, or Figure 12, or
Figures 13, 14 and 15 of the accompanying drawings.

15. A tool as claimed in any one of the preceding
claims in combination with a blank to which the tool
35 can be fitted, as to a pipe length, substantially to
seal the interior of the tube from the surroundings.



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Claims searched: 1-15

Examiner: Mr G J W Russell
Date of search: 9 May 1995

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

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Int Cl (Ed.6): B05C 17/00, 21/00; B08B 9/02; B25H 7/00

Other: WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	GB 2276113 A (STREET) see page 1 last paragraph	1
A	GB 380726 (DELAS) see page 1 lines 87-104	1
A	US 4674144 (PALMERI) see Fig.8	1
A	US 4663794 (CENTRAL PLASICS) see Fig.3	1
A	US 4195590 (HERRINGTON) see Fig.1	1

X Document indicating lack of novelty or inventive step
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A Document indicating technological background and/or state of the art.
P Document published on or after the declared priority date but before the filing date of this invention.
E Patent document published on or after, but with priority date earlier than, the filing date of this application.

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ABSTRACT:

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